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Geographical and Data Coverage

This Climatic Study covers the Mediterranean Sea from just west of the Strait of Gibraltar to the Levant Coast, and from North Africa to the Black Sea, with the greatest emphasis being placed on the marine areas (see Fig. 1). Data were too sparse in the Sea of Azov for that area to be included. Surface marine data statistics are presented on monthly charts in the form of graphs, tables, and isopleth maps. Land station data appear graphically in the text and in Station Climatic Summary tables in the last section of the publication. The marine data were machine plotted by one-degree quadrangle, computer analyzed, and those analyses adjusted and smoothed by hand. The graphs and tables for the marine areas are also presented by one-degree quadrangles (for visibility, wave heights, wind roses, and currents). These graphs and tables represent the objective compilation of available data; the data were not adjusted for suspected biases (e.g., low observation count, heavy weighting of observations during a short time interval, biases in coding of observations from various source decks, etc.), hence differences may be found when comparing the graphic data with isopleth analyses. The total number of observations for a given one-degree square should always be considered when interpreting the data, as the number of observations might be insufficient to permit representative statistics.

Over three million surface marine observations were used in computing the statistics. These data, taken from NCDC's Tape Data Family 11(TDF-11), were collected by ships of various registry traveling in the study area. Some observations were collected as early as 1854. Data for this study were obtained from the earliest available period through 1984. The bulk of the observations are from the last 35 years, which is significant because more recent observations contain more meteorological elements than pre-1948 reports. The density of observations is greatest along the major shipping routes; in the Mediterranean Sea, observations are most dense along the east-west axis running from the Strait of Gibraltar to the Suez Canal. Observational counts are also relatively good in most one-degree squares because there are many important ports of call throughout the Mediterranean.

Sea surface current information was extracted from the predecessor to this publication; A Climatic Resume of the Mediterranean Sea (1975). These sea surface current data were obtained from available ships' set and drift measurements. The data file containing these measurements is somewhat deficient in quality and quantity and is currently being updated; however, it was not scheduled for completion in time to be used in this edition. Chart utility is somewhat enhanced, despite the paucity of data, by the fact that the current variability in the Mediterranean Sea is not as great as in many other areas. The basic reason for the relatively small variability is that the Mediterranean Sea produces a water deficit because the evaporation over the basin is much greater than the water gain from rainfall and river flow. This deficit is offset by an inflow of water from the Atlantic Ocean which establishes a relatively consistent east moving surface current (See Fig. 2). Because of the high evaporation rate the water becomes very saline and thus relatively dense. It then sinks and sets up a west moving sub-surface current as the excess of this denser water spills over into the Atlantic. At times local wind conditions may be of sufficient strength to temporarily alter the local surface current circulation.

Physical Features

The Mediterranean basin is rich in human culture. This was especially true during the early Greek and Roman periods when the geographical location and climate of the Mediterranean played a most beneficial part in the progression of human activity, making it known as one of the important "cradles of civilization". For insight into the importance of climate from a historical perspective see Casson (1959) and Grant (1969).

The Mediterranean Sea is an important water body for commerce, being centered with Europe to the north, the African continent to the south, Asia Minor and the Middle East to the east, and the Strait of Gibraltar to the west which provides passage to the Atlantic Ocean and the important ports of northwestern Europe and the America's. The Mediterranean Sea is approximately 2100 miles long, as measured from the Strait of